Appl. No. 09/844,568 312 Amendment dated May 27, 2004 Reply to Notice of Allowance

## **Amendments To Claims**

This listing of claims will replace all prior versions and listings of claims in the subject patent application.

## **Listing of Claims**

Claim 1 (currently amended). An interconnect for an electrically driven solid electrolyte oxygen separation device comprising a composition of matter represented by the general formula:

wherein

Ln is La;

A is Sr;

B is Co;

0.3 < x < 0.5; 0.5 < x' < 0.7; 0 < x'' < 0.2;

0.9 < y < 1.05; and 0 < y' < 0.1;

 $0.3 \le x \le 0.5$ ;  $0.5 \le x' \le 0.7$ ;  $0 \le x'' \le 0.2$ ;

0.9 < y < 1.05; and  $0 \le y' \le 0.1$ ;

provided that x + x' + x'' = 1 and  $1.05 > y + y' \ge 1.02$ 

wherein  $\delta$  is a number which renders the composition of matter charge neutral.

Claim 2 (previously presented): The electrochemical solid-state device of claim 13 wherein the at least one interconnect consisting of a single layer comprises a composition of matter wherein Ln is La.

Claim 3 (previously presented): The electrochemical solid-state device of claim 13 wherein the at least one interconnect consisting of a single layer comprises a composition of matter wherein A is Sr.

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Claim 4 (previously presented): The electrochemical solid-state device of claim 13 wherein

the at least one interconnect consisting of a single layer comprises a composition of matter

wherein B is Co.

Claim 5 (previously presented): The electrochemical solid-state device of claim 13 wherein

the at least one interconnect consisting of a single layer comprises a composition of matter

wherein  $0.3 \le x \le 0.7$  and  $0.3 \le x' \le 0.7$ .

Claim 6 (previously presented): The electrochemical solid-state device of claim 13 wherein

the at least one interconnect consisting of a single layer comprises a composition of matter

wherein x" is 0.

Claim 7 (previously presented): The electrochemical solid-state device of claim 13 wherein

the at least one interconnect consisting of a single layer comprises a composition of matter

wherein 0.9 < y < 1.2 and  $0 \le y' \le 0.1$ .

Claim 8 (previously presented): The electrochemical solid-state device of claim 13 wherein

the at least one interconnect consisting of a single layer comprises a composition of matter

wherein y' is 0.

Claim 9 (canceled).

Claim 10 (canceled).

Claim 11 (previously presented): The electrochemical solid-state device of claim 15 wherein

the at least one interconnect consisting of a single layer comprises a composition of

matter wherein  $0.3 \le x \le 0.7$ .

Claim 12 (canceled).

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Claim 13 (previously presented): An electrochemical solid-state device comprising at least two electrochemical cells which are electrically connected in series by one or more interconnects wherein at least one interconnect consists of a single layer comprising a composition of matter represented by the formula

## Ln<sub>x</sub>Ca<sub>x'</sub>A<sub>x"</sub>Mn<sub>y</sub>B<sub>y'</sub>O<sub>3-δ</sub>

wherein

Ln is selected from the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu;

A is selected from the group consisting of Sr, Ba and Y;

B is selected from the group consisting of Cu, Co, Cr, Fe, Ni, Zn, Nb, Zr, V, Ta, Ti, Al, Mg, and Ga;

0.1 < x < 0.9; 0.1 < x' < 0.9; 0 < x'' < 0.5;

0.5 < y < 1.2; and  $0 \le y' \le 0.5$ ;

provided that x + x' + x'' = 1 and 1.2 > y + y' > 1.0; and

wherein  $\delta$  is a number which renders the composition of matter charge neutral.

Claim 14 (original): The electrochemical solid-state device of claim 13 wherein Ln is La, A is Sr, B is Co,  $0.3 \le x \le 0.5$ ;  $0.5 \le x' \le 0.7$ ;  $0 \le x'' \le 0.2$ ; 0.9 < y < 1.05; and  $0 \le y' \le 0.1$ ; provided that x + x' + x'' = 1 and  $1.05 > y + y' \ge 1.02$ .

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Claim 15 (previously amended): An electrochemical solid-state device comprising at least two electrochemical cells which are electrically connected in series by one or more interconnects wherein at least one interconnect consists of a single layer comprising\_a composition of matter represented by the formula:

## $Ln_xCa_{x'}Mn_yO_{3-\delta}$

wherein

Ln is selected from the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er,

Tm, Yb, and Lu;

 $0.1 \le x \le 0.9$ ;  $0.1 \le x' \le 0.9$ ;

1.0 < y < 1.2

provided that x + x' = 1; and

wherein  $\delta$  is a number which renders the composition of matter charge neutral.

Claim 16 (original): The electrochemical solid-state device of Claim 15 wherein Ln is La,  $0.3 \le x \le 0.5$  and 1.0 < y < 1.05.